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# NOR' WEST MINER

EDMONTON, ALBERTA

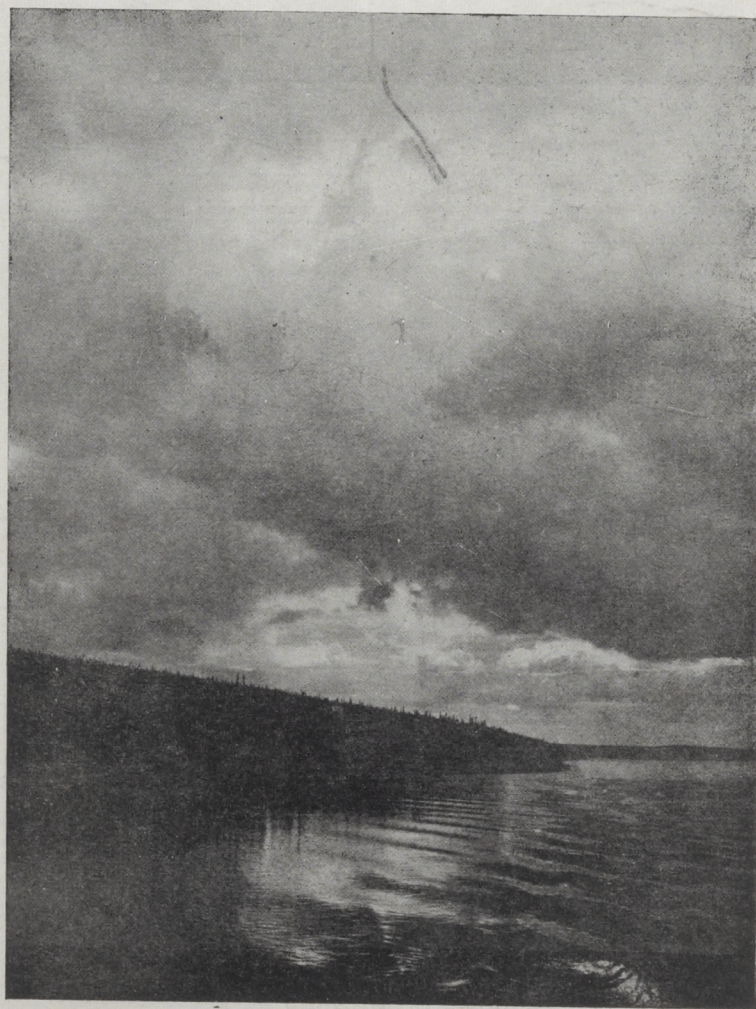
*A monthly Devoted to Northern Mining Development in the Yellowknife, Great Bear and Great Slave Lakes, Goldfields, Alberta, and Northern B.C., the Tourist and Game Hunting Attraction of Alberta.*

Vol. X  
No. 7

JULY  
1942

## THE WATERWAYS OF THE GREAT NORTHLAND

25c A Copy



Midnight on the Mackenzie. This picture was taken at 11:45 p.m. in June. It shows a section of the Mackenzie near Fort Norman.

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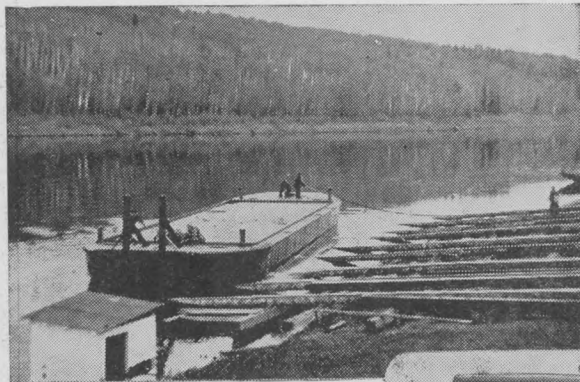
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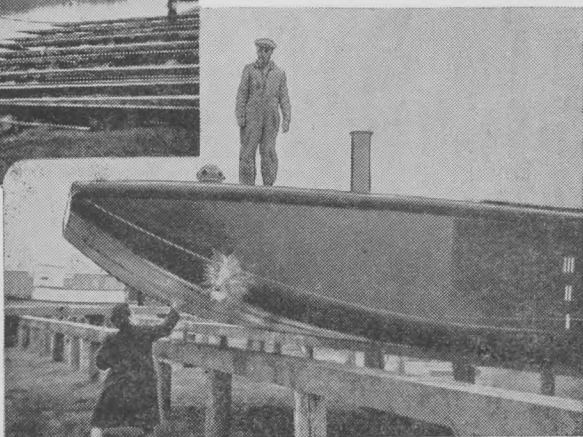
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# THE NOR' WEST MINER

(EDITOR—F. S. WRIGHT)

A monthly devoted to Northern Mining Development in the Yellowknife, Great Bear and Great Slave Lakes, Goldfields, Alberta and Northern B.C. Mining districts, also the tourist and big game attractions of Alberta.

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## Says The Miner ...

Said a Subscriber in a letter of recent date: 'Why do you not print the name of the editor of the Nor' West Miner in the magazine?'

Bowing modestly to subscribers suggestion we will do so in future.

His name is F. S. Wright, resident of the West since 1899, veteran of the R.C.M.P., serving in that force during the Klondyke rush in the Yukon. Later on he covered the major part of North B. C. on foot or with packhorse, or dogs. He came to Edmonton in 1921.

Here he organized a publicity campaign which resulted in the Jasper Highway being what it is today. He started the ball rolling, suggested that a road could be cut for \$5,000 over 47 miles. Government said it could not be done, so the \$5,000 was raised by public subscription in Edmonton and district, the road was cut before the snow flew in the fall. This was in 1924. In 1925, the people of the Peace River wanted direct road connection with Edmonton. He organized a pathfinder trip, took a car from Edmonton to Rolla, B.C., taking eight days of running time to get it across swamps, through creeks and over forestry trails. This trip resulted in attention being drawn to the Peace River Highway as it is today.

In February 1936, he drove a dog team from Lac La Biche to Fort Fitzgerald. Object? to get in on the "platinum rush" which caused such a furore at that time.

In 1929 went down North with Dominion Explorers. With an Indian as a companion, left Fort McPherson, near the Arctic Circle, together with three dogs and a pack on back, and lived for over three months off the country.

In 1938 and 1939 made canoe trips.

One in 1938 to Yellowknife via Waterways (by canoe). The other in 1939, from Peace River Crossing to the Yellowknife. On both trips Great Slave Lake, 320 miles long and 175 miles north and south, was crossed with an eighteen-foot canoe.

In 1930 suggested the Grimshaw Great Slave Lake winter road. After eight years of constant hammering, the two governments finally decided to cut it in 1938. It is there today.

In 1935, suggested that the best location for the Alaska Highway was through Edmonton, namely, the Prairie or "C" route. Kept hammering at it. In 1940, spread the story across Canada and the United States. In 1941 was invited across the line by various associations to tell them the story of the North. They liked the story — and when an International Highway conference to be held in Canada was suggested, they agreed to "come up to Canada" when such was held. Got Regina to sponsor a conference. It was held in May 1941, attended by delegates from all over the States and western Canada. Resulted in direct representations being made to Ottawa and Washington, so that when Pearl Harbor cracked and the Alaska Highway became an important feature there was plenty of argument in favor of the Prairie route presented to the Commission. Whilst such may not have been the deciding factor which has placed Edmonton on the top of the world as far as progress is concerned, it may have helped.

How was all this done? He always had the confidence, and still has, it is hoped of Mr. Subscriber and advertisers. They paid the cost. Why did he do it? He believes in Edmonton as one of the best locations in Canada.



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# WAGES IN THE NORTH

Considerable discussion has taken place recently as to the scale of wages being paid upon the Alaska Highway and Fort Norman work. It appears that the United States administration is paying a higher scale for northern work than is being paid in Edmonton and elsewhere for similar work.

Certain busy bodies have made it their business to raise an outcry about the way the Americans are "upsetting" the regular wage scales of Canada.

Such a contention is absolutely incorrect. The United States officials are not doing so, BUT THEY ARE PAYING THE RECOGNIZED STANDARD WAGE WHICH IT HAS BEEN CUSTOMARY FOR YEARS TO PAY, BOTH IN THE N. W. T., NORTHERN BRITISH COLUMBIA AND THE YUKON.

The standard wage is and has always been \$1.00 an hour for common labor, with the exception of certain mining and transportation companies who, in order to cheapen this cost, have employed men from the outside on a year or more contract basis at less than \$100 a month. These are the people perhaps who are most concerned, but that is no reason why Edmonton public bodies should assist in upsetting the wage scale of the North.

The result of the many conferences which have been held, at which Ottawa and U. S. officials have attended, although not familiar with northern conditions, has been the acceptance of the theory that the Canadian scale as applicable to Alberta and other parts of the west should be adopted for the North.

Such is very unfair to men seeking to go north on this most important war work. The U. S. contractors, apparently with the idea of keeping peace within the family, have agreed not to employ Canadian labor and so Canadian labor has to rely upon Canadian contractors, who no doubt, are not doing the work for any less than the American contractors, to set a fair wage scale.

Anyone who has been in the North, knows that the conditions under which men have to work, more than entitle them to the extra remuneration. Every one knows, excepting apparently some of our voluntary Edmonton spokesmen, that the northern scale is a fair

one, so why should Ottawa, Edmonton's Chamber of Commerce and others seek to upset the applecart.

If United States contractors employ no Canadian labor, it means that much money which otherwise would circulate locally goes out of the country. If, in addition, thought is given to the necessity of obtaining the services of men used to northern conditions in preference to green outside labor it must be apparent to all that everyone loses.

It is about time that Ottawa paid attention to the fact that much of the local advice handed out to visiting officials is only mere guess work on the part of our voluntary advisory boards. If many of them have been further north than Waterways, Alberta, excepting only by taking brief air trips, we have yet to hear about them.

Seeing the North by air is getting a birdseye view of thousands of miles of country, dropping down at various white spots mostly inhabited also by people who sit in a little hamlet or trading post year in and year out and know as much about the North as an outsider, excepting only they have listened more often to the "Paul Bunyan" yarns, the real Northerner dearly loves to give his unsophisticated cousins.

They say money does not count in this tremendous war effort—therefore what better way can such work be speedily accomplished than by getting men of experience, paying them full and fair wages for the work they do. Authorities should ignore the interference of people who are not acquainted with the real conditions under which this work must progress.

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# NORTHERN WATERWAYS...

## The Mackenzie River

In view of the interest now being taken in northern development the following description of the Mackenzie River may prove of interest to the many newcomers in the North.

The name Mackenzie River is applied only to that portion of the Mackenzie River system, extending from Great Slave Lake to the Arctic Ocean, a distance of roughly 1000 miles. The total distance, however, from headwaters of the most distant tributary of the Mackenzie River, namely the Findlay River, to the Arctic Ocean is 2,525 miles.

The Mackenzie River on issuing from Great Slave Lake has a width of 7 or 8 miles across, but is filled with islands and shallow with a moderate flow of current. Fifteen miles down stream the islands cease and the river contracts to a width of four miles. With a further decrease in width to 2 miles the strength of the current increases to 4 miles per hour, until at Providence, 45 miles down, several islands block the channel and cause an acceleration of current in what are called the Providence Rapids. In these rapids, the water, though swift, is quite smooth and steamers have no difficulty in ascending them.

The country bordering the river below Great Slave Lake is low and flat and the valley is shallow, with banks seldom exceeding 30 feet in height.

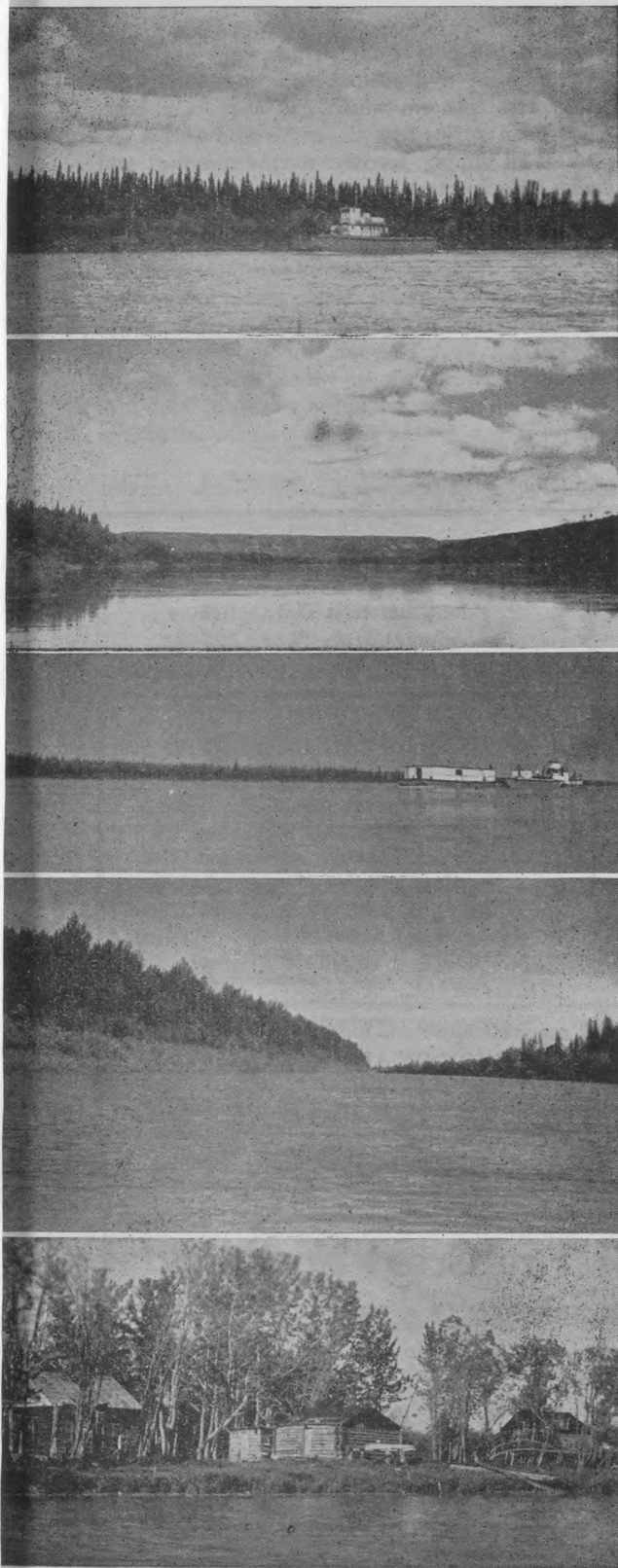
Below Providence the Mackenzie passes through an expansion known as Little Lake where it receives the water of a fairly large stream from the North, known as the Horn River, which rises in the rear of Horn Mountain. Continuing westward it remains wide and sluggish as far as a point near Trout River known as the "Head of the Line", so called because in ascending the river in the old days, the sluggish current permitted travellers to discard the tracking line and use paddles or oars. Yellowknife River and Trout River, streams that head in large lakes, are passed on the south side. The current increases its strength at the "Head of the Line" and from that point to the mouth of the Liard River, 75 miles, it continues very swift and the width of the stream is reduced to little more than half a mile. The banks here are slightly higher and instead of sand and clay are composed of gravel and sand.

Fort Simpson is situated on an island 2 miles long just below the junction of the Mackenzie and the Liard Rivers. The main channel of the river here is one mile wide and from this point northward the full width of the stream is rarely less than this.

From Simpson to Nahanni River mouth, a distance of 75 miles, the Mackenzie maintains its northwesterly direction. Its banks are about 200 feet high with gravelly or







boulder beaches and the current runs at an average rate of 4 miles per hour. Several groups of low islands occupy this stretch and the only large tributary is the Marten River which enters 8 miles below Simpson.

At the mouth of the Nahanni River, the Mackenzie strikes against the base of the Mackenzie Mountains, and being deflected sharply to the North by them, flows for several hundred miles parallel to and within sight of their peaks. Several low islands, the longest 20 miles in length, occupy the river bed below the Great Bend, and behind one of these Root River enters from the west. A few miles further Willow Lake River comes in from the east, and here the Mackenzie may be said to enter the mountains, for a range, low and wooded at first, but gradually increasing in altitude, rises out of the lowlands on the east of the river and runs parallel to the river for about 200 miles. This range is known as the Franklin Range.

At the site of Old Fort Wrigley, which is 20 miles below Willow Lake River, the Mackenzie is about  $1\frac{1}{2}$  miles wide, but below this point for 100 miles, high hills press closely down on either side and confine the river to a channel free from islands and only about half a mile wide. The current here runs about five miles an hour.

New Wrigley is 25 miles below the old site, almost opposite the "Rock by the River Side", a steep isolated round topped hill, rising directly from the waters edge to a height of over 1500 feet. Below this point the west bank becomes high and the east bank lower and no feature of interest occurs for at least 30 miles, or until Blackwater River enters from the East. This stream is about 75 yards wide and is easily recognized by the great column of clear dark water that it discharges into the Mackenzie and which preserves its distinctive character for several miles, before mingling with the waters of the Mackenzie.

Two miles below Blackwater River, the Mackenzie turns sharply to the west for three miles, below which it receives a stream on the left, 100 yards in width. Salt river is 33 miles down on the right side and Gravel River 49 miles below the Blackwater River. Gravel river is a mountainous stream flowing in from the west and is frequently used by Indians as a canoe route from the Mackenzie Mountains to the Mackenzie. They do not canoe up stream, but in coming down manu-

Scenes on the great rivers of the North



facture what are known as "skin boats" which consist of a willow framework, over which raw moosehide is sewn. These boats are canoes can stand great punishment when travelling down stream.

The Mackenzie expands again about Gravel River, enclosing a number of islands, and from this point to the Ramparts, a distance of 326 miles the width of the stream is never less than a mile and frequently widens out to two miles. The current varies in the various reaches but maintains an average rate of four miles per hour. The banks are from 100 to 400 feet high.

A few miles above Norman, on the east side of the river, occasional columns of smoke indicate the presence of fires which are consuming seams of lignite coal outcropping in the bank. Landslides occasioned by the burning out of the coal and the consequent undermining of the banks occur at several points, and at others the shales are baked and reddened. These fires have been burning for at least 150 years.

Norman occupies a commanding position on the east bank of the river in the southern angle formed by the entrance of the Bear River, and in the northern angle a steep, flat-topped mountain known as Bear Rock, rises to a height of 1400 feet almost directly from the water of the Mackenzie.

Fort Norman is now the scene of much activity in connection with oil development. This oil is obtained at comparatively shallow depths one well struck oil at 783 feet and produces

around 100 bbls a day. Other wells have also come in at a depth of 936 and 1063 feet. Hitherto, this oil, which has a paraffin base, has been refined at the wells and forms the chief oil supply for the northern mines and river motor transportation. In addition a body of salt lying on the end of Bear Rock is used by inhabitants of Norman.

From the above description of the river as far as Fort Norman, it shows that there are no navigation difficulties between Great Slave Lake and Fort Norman, the only major difficulty is head winds, which driving against the river current are apt at times to "kick up" quite a sea on the long wide reaches of the river.

—(Con. next issue—Fort Norman to Arctic)

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# NORTHERN TRANSPORTATION BOTTLENECKS

As usual, when any large quantity of freight has to be moved into the North, there is generally a 'bottleneck' which prevents it getting in as regularly as it might.

As usual, when any large quantity of freight has to be moved into the North, there is generally a "bottleneck" which prevents it getting in as regularly as it might.

If it is not low water on the upper river route, namely the first twelve miles down river from Waterways, it is the delta at Lake Athabasca, where water is also low the greater part of the season.

If it is not here, storms on Great Slave Lake, and the trouble of transshipping around the Smith rapids, even though an excellent portage service exists, again present obstacles to be overcome.

Once these obstacles are passed, it is clear sailing right down to the Arctic, but, whenever supplies go North by water these conditions have to be faced. It is true that the northern transportation companies have learned, mostly by bitter experience, what can and what cannot be done, when the high water season is missed, but even they are hard put to overcome such.

It is some 700 miles to Fort Resolution on Great Slave Lake from Waterways the end of the railway which is 300 miles North of Edmonton. From Fort Resolution to Hay River is another 75 miles west. So the total distance from Waterways to Hay River is 775 miles.

It is some 380 miles from Grimshaw

in the Peace River district to Hay River. Grimshaw is about the same distance from Edmonton by rail as is Waterways, Alberta. The rails run to Grimshaw in a North Westerly direction whilst those to Waterways go North East.

At Hay River, there is the only good harbour and possible wharfage facilities on the south shore of Great Slave Lake, a body of water 12,000 square miles in area.

A main highway runs from Grimshaw to the Third Battle River, a distance of approximately 100 miles. A winter road connects this highway with Hay River village. This road, although roughly cut out at a cost of \$80,000 has been of great service in getting winter supplies to the mining areas of the North and it has been used for this purpose ever since 1939.

By using this route, it would be possible to avoid all the obstructions and bottlenecks, previously mentioned, in addition to over a hundred miles of the turbulent waters of Great Slave Lake to the outlet.

By using this route it would be possible, if it was carried another 70 miles to Providence on the Mackenzie river, to avoid the lake entirely, and summer navigation would be enabled to start at the beginning of May instead of late June, owing to the fact

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that the river opens up at least six weeks earlier than the Lake.

Therefore is it not obvious that in view of the tremendous sums which have to be expended in furnishing boats and barges for a service which has many "bottlenecks", the diversion of such monies to putting a real high-way over the already cut out winter right-of-way would be profitable, both in time and use.

According to information received some 47,000 tons of freight is to be moved from Waterways down North. Such a tonnage cannot be moved under present conditions by water. The equipment is not available and the time of high water is too short.

The Grimshaw-Great Slave Lake road can be fixed to take even summer freight in very short order, and in any case is a certain trouble free route after the snow flies in the fall.

Why not use this route? If it were put to use, the whole of the fleet of boats and barges now operating on the upper river could be added to the lower river fleet. It is possible to move boats across the Smith Portage.

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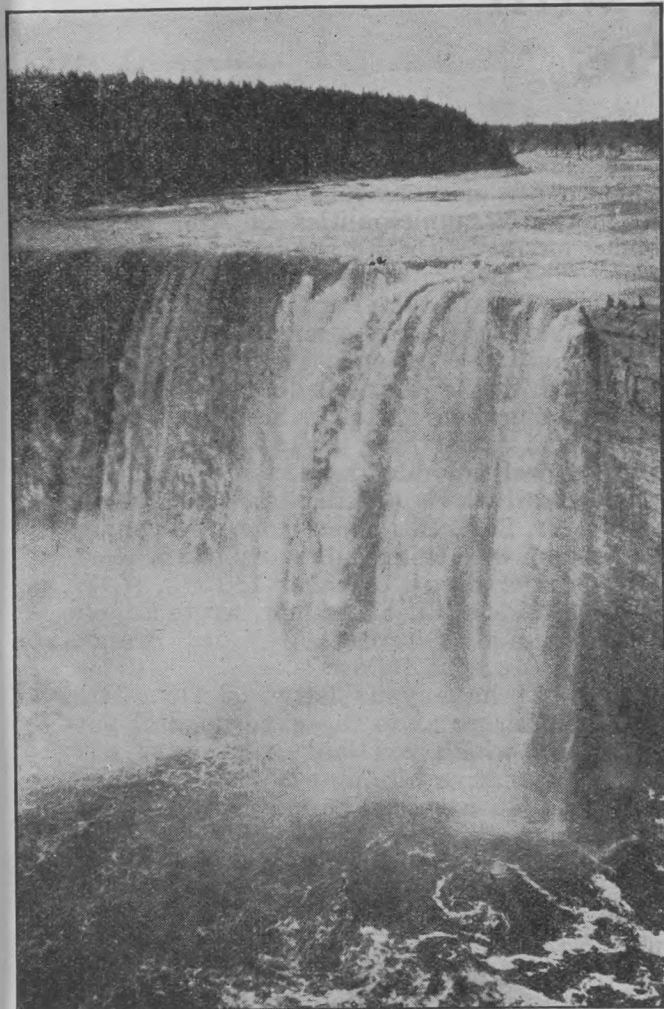
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Alexandra Falls at Hay River, Great Slave Lake.

## HAY RIVER HAS POTENTIAL WATER POWERS

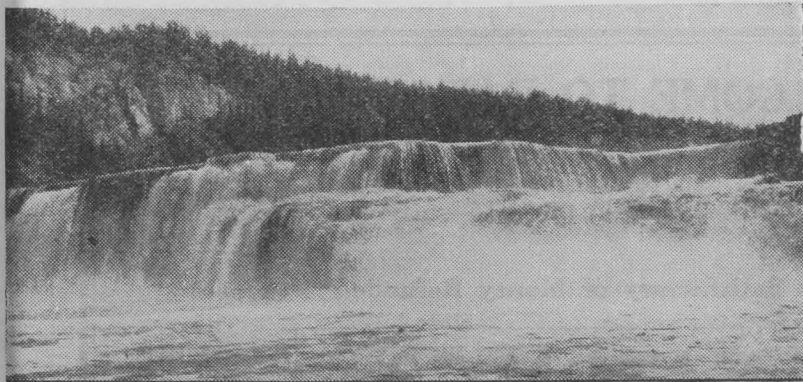
Hay River, along which the winter road from Grimshaw to Great Slave Lake is cut has potential water powers. In addition the Alexandra Falls are one of the most scenic features of the North. At Alexandra Falls the Hay River is 490 feet wide and there is a sheer drop of 105 feet. The lower ones, the Empress Falls has a drop of 46 feet in a series of steps. Below these falls are 3 miles of rapids and a gorge 170 feet deep and five miles long. These falls are 20 miles in a direct line from the mouth of the river on Great Slave Lake, the actual distance by water being 43 miles. The stream is swift, but deep enough in high water for shallow draft steamers and the valley is about one quarter of a mile wide.

However, whilst the river drops to this extent, its banks, along which the Grimshaw winter road runs are level, forming an excellent ridge for road use.

After the war, this road connection between the Northern Peace and Great Slave Lake must change the whole picture of Northern development. It is not only a shorter route than the present water route, but, in

addition strikes almost the centre of the present known mining areas of the North.

From the mouth of the Hay River, deep water boats can operate in all directions across Great Slave Lake and down the Mackenzie River to the Arctic.



Empress Falls on Hay River, Great Slave Lake.



# SURFACING ROADS WITH ALBERTA TAR SANDS

The commercial extraction of oil from Alberta Oil Sands has yet to be done. Although numerous experiments have been made, and are being made in this connection no process which can be construed as being economically successful from a commercial point of view, has been discovered.

The two processes attempted in the past, namely the use of solvents, principally carbon disulphide and the lighter petroleum distillates or the use of hot water and steam have not proved successful. In the case of the first process, it was very expensive with a serious loss of the solvent used, besides being dangerous to the health of those employed with the added risk of explosions and fire. In the case of the latter, although results were more encouraging, the separation of the oil from the sand was comparatively inexpensive and was rapid, but for commercial use the extraction was only 60% complete.

The value therefore attending the commercial extraction of oils from there sands, according to S. C. Ells, Dominion Government engineer who spent many years experimenting with the sands, is not of commercial importance.

For many years, Thomas Draper of Port Huron, Michigan and Petrolia, Ontario, carried on many activities in connection with the use of oil sands

in their natural state, for road surfacing. He made practical use of these sands on many jobs of road surfacing. Many municipalities in Alberta laid paving with the sands for surfacing. The two railways, Canadian National and Canadian Pacific also used this material for station platforms and railway crossings. The Edmonton Exhibition authorities had similar surfacing done on the Exhibition grounds, and as far back as 1915, a section of a well travelled road, namely, the Fort Trail was laid with these sands, under Mr. S. C. Ells supervision. In connection with this particular piece of work, under date November 1, 1916, A. W. Haddow, City Engineer, wrote Eugene Hannel, Director of Mines Branch, Ottawa, as follows:

"I have your letter of Oct. 24th, inquiring as to the experimental paving which you laid in this city with the native bituminous sands from Ft. McMurray and Fort McKay. I examined this pavement yesterday upon receipt of your letter, and find it in perfect condition. The only defect is the transverse crack which is probably due to contraction of the base and sub grade and could not be taken in any way as a default of the surfacing.

The pavement does not show any markings due to horse traffic in hot weather. There are no indications of any waving either in the sand mix-

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ture or rock mixture. There is no indication of pitting, which we sometimes find in our suburban roads, due to the clay caking on the surface and when it flakes off, very often pits the surface by taking a small portion with it."

This letter, written 26 years ago, when there was more horse traffic

in addition in wet or icy weather a dangerous condition occurs. Oil sand roads are practically skid proof.

The enormous deposits of these oil sands at Fort McMurray are easily available by either rail or by the cutting of right of way for a distance of 180 miles to Lac La Biche, at which point the main Alberta road system



Laying Tar Sand Surfacing on Edmonton Sidewalks.

than motor travel, shows that the City Engineer was satisfied as to the way the surfacing stood up, on a road which carried a heavy run of traffic. Today, notwithstanding still greater traffic, this particular section is still as good as it ever was with practically no maintenance cost.

In 1928 the road at the back of the Parliament buildings, Edmonton, was surfaced, on a gravel base, with these sands. Once again time has proved that this type of road surfacing is more enduring than any other in use.

The Provincial Government of Alberta has thousands of miles of roads under its supervision. In some cases, the blotter system of surfacing has been used. This, however, requires constant maintenance by re oiling. In

would connect. These sands can be laid either hot or cold, and if dumped as trucks proceeded south would be packed in by the traffic. Where pot holes might occur, owing to difference in the bituminous content of the sands, more could be dumped to fill such.

In view of the activity on the Alaska highway and the ultimate surfacing of the same, is it not obvious that Alberta oil sands would be ideal for the purpose. Waterways and Fort St. John are connected by rail via Edmonton so the question of transportation is not involved. A right of way properly ditched, with a gravel sub surface base is all that is required to place the sands on. The result would be a perfect road with practically no maintenance cost.



# RAILS TO ALASKA

According to advices a railroad is to be built from Prince George north west to Alaska, so once again Edmonton is on the chosen route. It is connected with Prince George by the Canadian National Railway, which also connects Vancouver and the Pacific Coast with that point.

Some have suggested that the P.G.E. Ry. be used. The Pacific Great Eastern Railway is a line very similar to the Edmonton Dunvegan and Yukon Railway which was started during the 1900's but only ran a few miles in Edmonton before giving up the ghost. It is still being used as a shunting road to a packing plant. The P.G.E. conceived in those gloriously hectic days when Edmonton and the west had its railway boom, was intended by its promoters to side swipe Prince Rupert by diverting all traffic to Vancouver. This dark and gory plot on the part of certain G. T. P. Railway officials at the time, missed fire. They had an elephant on their hands, so naturally passed the trunk, tail and body over to the unsophisticated taxpayers of British Columbia. That Government, under the glorious regime of "Okalla John" the then Premier of B.C. attempted to complete it to Prince George. After many trials and tribulations it is still uncompleted, this terminal being still quite a piece south of Prince George. In addition the other end starts at Squamish which is quite a distance from Vancouver, so here again is a railway which starts nowhere and ends nowhere.

Many a story is told in Liberal

circles of what this road cost the taxpayers. It was a common practice for "Okalla John" to take a trip over the road and change the road bed at will from one side of a lake to another. He, in addition to being Premier of B.C. was also, in his own opinion, a railway builder. However after expending some \$40,000,000 on it, British Col-

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umbia gave up and so the P. G. E. of today.

The Canadian National Railway furnishes excellent connection from Vancouver to Prince George. The Northern Alberta Railway, could also, with an extension of some 80 miles, connect up with any railway built north from Prince George, that is if Fort St. John, the now most important town in the North, is to get rail connection from Prince George. The only real rail route, like the only real road route, is that which the Alaska Highway is following today. In fact it is rumored that the Alaska Highway has already been located with a view to using it as a railway grade.

If the rails go north from Prince George, connection would be estab-

lished with the Pacific coast. If, in addition, this 80 mile extension of the N. A. R. was also made, connection would be established with the great industrial centres of the Eastern States and Canada.

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## RECENT PUBLICATIONS

Recent publications received from Dept. of Mines and Resources, Ottawa are as follows:

Preliminary Maps—Eastmain, Que.; Bassano, Alberta; Princeton, B.C.

Summary account Marble Mountain area Alberta.

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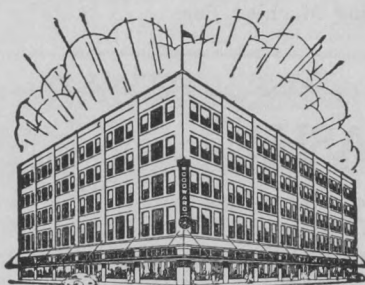
Maps of Indin Lake, N.W.T., Hardisty Lake, N.W.T.

Copies cost 10c and may be obtained from King's Printer, Ottawa, Ont.

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Development along the lines laid  
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## **THE OUTLOOK AT GOLDFIELDS**

Goldfields mining with the closing  
down of the Box Mine is slackening  
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## TOTAL WAR AND DEFENCE

Total War and Defence is the name of an organization with headquarters at 614 Broder Bldg., Regina, Sask. Recently it has published a booklet entitled "The Design for Victory". It deals with the various phases of Canadian activity as regards the war effort. Offers a solution to many difficulties under the slogan "Science points the way". In its introduction the booklet says in part:

"Loyal and patriotic Canadians are now in favor of going all the way for a TOTAL WAR EFFORT. If there is a better way to save the country, they want it, and they want it now. The questions that are asked by them and of them are 'What is a total war effort?' 'What do you mean by conscription of manpower, conscription of wealth, conscription of resources?' 'Who will introduce them?' The answers required much intensive research work, unrestricted by any personal opinions or beliefs in the matter. The answers are provided in the booklet 'The Design for Victory'."

The booklet does not pull its punches. It commends some parts of the war effort, condemns other parts. It is interesting reading. Copies can be obtained by addressing Total War and Defence, 614 Broder Bldg., Regina Sask. The publishers name is Dr. Joshua N. Haldeman. The cost is 25c a copy.

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